

SOME SPECIES AND GENERA OF THE FAMILY ASILIDAE
(DIPTERA)

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In this paper are several descriptions of species and genera of robber flies.

Cophinopoda, new genus

Type of genus: *Asilus chinensis* Fabricius, 1794. There is a second species to which one of the older names in synonymy under *chinensis* may apply.

Large flies related to *Ommatius* Wiedemann. They are characterized by the wide, more prominent face, densely beset with long, bristly pile over the middle and on the cheeks. The low mesonotum, the strong bristles on the scutellum, long, ventral prongs of male superior forceps and process of the hypandrium, as well as a patch of characteristic hairs immediately above the halteral base further characterize these flies. Length, 30 mm.

Head.—The head is similar to that of *Ommatius*. Occiput is moderately prominent throughout; upper bristles are short and stout and confined to the upper corner of eye. Proboscis longer than the face. Face extensive and more strongly extended below but gradually produced; beneath antenna it is about one-fourth the head width, strongly divergent below to more than one-third the head width.

Thorax.—The mesonotum is low and pollinose, broadly covered by numerous, suberect setae, especially anteriorly; aerostical bristles undifferentiated and dorso-central bristles only so posteriorly. Lateral bristles consist of 2 notopleural, 1 supraalar, 1 postalar and 1 pair on scutellum. All of these bristles are stout and long. Base of scutellum on each side with a tuft of pile over the halteres. Prothorax dissociated.

Legs.—The legs are generally similar to those of *Ommatius* including claws and pulvilli. The bristles of the legs are remarkably stout, blunt, and almost spike-like; the hind femur has 6 dorsolateral, 6 dorsomedial and 1 dorsal pair at the subapex, besides 7 ventrolateral and 7 ventromedial bristles.

Wings.—The posterior branch of the third vein ends almost at the wing apex and both the first and second posterior cells are wide at the margin. The second posterior cell is strongly widened at the base and twice as wide as the end of the discal cell.

Abdomen.—The abdomen is stout, especially at base and gently tapered; the pile is short, appressed, setate; sides of first tergite with 7 stout bristles. Males with 8 well developed tergites. Superior forceps with a distilateral, flattened wing curved towards midline and bearing a long, slender, ventral, sigmoid, apically hooked process. Hypandrium with long, apical process. Female terminalia consists of a flat, quadrangular plate with medial crease and it has a posterolateral corner extension of the eighth sternite.

Molobratia, new genus

Type of genus: *Asilus teutonius* Linné, 1767.

I am indebted to the kindness of Mr. H. Oldroyd of the British Museum (Natural History) for calling to my attention the fact that this species, *teutonius* Linné, hitherto regarded as the type of the genus

Dasypogon, is not in fact the type of *Dasypogon* Meigen. The type of *Dasypogon* is *Asilus diadema* Fabricius, 1781, by designation of Latreille, 1810. Since *Asilus diadema* is also the type of *Selidopogon* Bezzi, 1902, and for the earlier *Cheilopogon* Rondani, 1856, both these names must sink. Hence a new name is required for *Asilus tenuous* Linné and the characterization as given here includes also *Dasypogon japonicum* Bigot, 1878.

Flies of medium size or larger, with drooping aspect of head and abdomen. They are relatively bare with long legs and the front tibia and tarsi are unusually lengthened; anterior tibia bears at apex a greatly elongate protuberance. Spines absent on the female terminalia. Length, 25 mm.

Head.—The face is moderately prominent throughout but never strongly extended or gibbous and is not quite plane in profile. Occiput nowhere prominent but its pile everywhere stiff and bristly in character. Proboscis stout and laterally compressed. Palpus clearly of 2 segments. Antenna moderately elongate; third segment longer than the first 2 segments combined, sometimes laterally compressed, generally attenuate apically and with long, conspicuous, dorsal bristles; the third segment bears a well developed, pointed microsegment with apical spine. The face varies from one-fifth to one-third the head width; it bears scanty, stiff pile, long or short over the middle and numerous, slender or stout, long bristles on the lower third. Ocellarium low but prominent with 3 pairs of bristles.

Thorax.—The mesonotum is low and rather bare with a well developed band of bristly, dorsocentral pile and more scattered acrostical pile. Lateral bristles consist of 5 notopleural, 5 to 7 supraalar, 3 to 5 postalar, and scutellum either without bristles or pile or with several pairs of long, slender bristles; humerus without bristles. Prosternum dissociated.

Legs.—The legs are elongate, especially on the anterior tibia and tarsus. Femora relatively slender. The hind femur bears short, stout bristles which consist of 5 to 7 dorsomedial, 5 dorsolateral, and 6 or 7 on each side below and a dorsal pair at apex. Anterior and middle femora with 7 to 11 bristles. Anterior tibia at apex with exceptionally long and characteristic protuberance and heavy, stout spine at its apex; anterior basitarsus with ventral swelling and denticles. Claws sharp; pulvillus long.

Wings.—The marginal cell, all posterior cells and anal cell widely open.

Abdomen.—The more or less cylindroid abdomen is slightly flattened across the middles of the tergites. Males with 7 tergites, the seventh reduced; females with 8 tergites, the last considerably reduced. Male terminalia rotate, the epandrium large and quite unclenft. Female terminalia inconspicuous, the lamellae large and spines absent.

Opocapsis, new genus

Type of genus: *Laphria dioctrioides* Walker, 1860.

Very small flies belonging to the tribe Atomosini of the subfamily Laphriinae. They are readily distinguished by the presence of only 4 posterior cells on the wing. Apparently related to *Clariola* Kertész, which has 5 posterior cells. Length, 5.5 mm.

Head.—The face is quite plane with the eye except for a minute extension on the lower part; anteriorly it is quite narrow, with 2 fine bristles above and 2

somewhat longer bristles below. Palpus of 2 segments, the first minute and the second small. Proboscis minute, barely protruded beyond face and not constricted in the middle. Antenna elongate; the third segment is longer than the first 2 segments combined and tapered from the base to a comparatively fine point at the apex; in the middle it bears a deep incision with basal, spinous bristle.

Thorax.—The mesonotum is polished and shining, apparently without acrostical elements and with a single row of fine, scanty, suberect, dorsocentral hairs. Lateral bristles are slender and consist of 1 notopleural, 1 supraalar, 1 delicate postalar, and on the scutellum 1 pair of quite long, rather stout, closely adjacent bristles. Post metacoxal area fully chitinized.

Legs.—The hind femur is slightly lengthened and rather distinctly thickened; of slender bristles it bears 3 laterally, 1 dorsally at apex, 1 medially at apex, 3 very slender, long, anteroventral bristles, besides 2 or 3 quite long, slender, ventromedial hairs. Claws short, sharp; pulvilli nearly as long as claws; empodium long and basally stout.

Wings.—One posterior cell is missing and it appears to be the third; all other posterior cells open maximally. Anal cell closed with a short stalk; marginal cell likewise. The ambient vein ends at the middle of the anal cell; alula quite narrow.

Abdomen.—The abdomen is slender and subcylindrical though slightly flattened on first 2 or 3 tergites; it is strongly punctulate, slightly but gradually widened. Sides of first tergite with 4 rather stout, white bristles in a vertical row; middle of sides of second to fourth tergites, each with a rather long, distinct, slender bristle. Seven tergites in male. Male terminalia small, inconspicuous, hidden by the cupped abdominal apex.

Zabrotica, new genus

Type of genus: *Zabrotica clarkei*, new species.

Small, cylindroid, short pilose flies, belonging to the Dasypogoninae and related to *Hypenetes* Loew. From *Hypenetes* they are readily separated by the quite different third antennal segment, which is not sharply constricted and attenuate at the base. Male terminalia with 2 long, curved, blunt processes. Length 11 to 13 mm.

Head.—The face is nearly straight, vertically visible in lateral aspect only below. Occiput weakly developed above, more prominent below. Proboscis short. Palpus of 2 segments. Antenna short, the third segment laterally flattened and gradually expanded from the base but rarely more than twice as wide at any point as its basal width; apex slightly narrowed. The face below the antenna is one-fourth the head width. The face bears a rather dense, vertical band of stout bristles which are pale or black. Ocellar protuberance low, with 5 pairs of bristles.

Thorax.—The thorax is pollinose on the pleuron and lateral mesonotum; mesonotal pile is scanty, setate or bristly and both acrostical and dorsocentral elements are differentiated. Lateral bristles consist of 3 notopleural, 1 above wing but situated posteriorly, 2 on postalar callosity and 3 pairs on the scutellum.

Legs.—All femora moderately thickened. Bristles comparatively numerous. On the hind femur there is a transverse row of 3 chiefly medial apical bristles, 1 dorsal subapical, 4 dorsolateral, 4 lateral, 5 ventrolateral and 7 ventromedial bristles. Middle femur with fewer bristles. Anterior femur with 4 dorsal bristles, besides 1 or 2 posterodorsal bristles near outer third. Anterior tibia without spine at apex. Claws sharp, empodium thick at base, pulvilli long and slender.

Wings.—The marginal cell is open; anterior branch of third vein ends well above wing apex. Fourth posterior cell closed with a long stalk. Anal cell closed in margin. Ambient vein complete.

Abdomen.—The abdomen is cylindroid and tapered. Pile is abundant but flat appressed, coarse in males; middles of tergites largely bare. Tergite one with 5 or 6 pairs of bristles. Eight tergites in each sex. Epandrium emits on each side a long, obtuse process; hypandrium emits a single long, curved process. Spines on the acanthophorites.

Zabrotica clarkei, new species

Very dark brown, feebly shining, with abundant brownish yellow pollen.

Length, 12 mm.

Male. Head.—The head is black, densely covered with brownish yellow pollen on the front, anterior part of ocellarium, a narrow stripe between the ocelli behind and the whole occiput. On the face there is dense, coarse pubescence of the same color, which extends to a more limited extent over the middle portion of the face among the dense bristles of the mystax. The gibbosity of the face occupies perhaps a little more than three-fourths of the face and is established a little abruptly a short distance beneath the antenna. The middle half of the face on this gibbous portion is densely covered with numerous, slender, long, black bristles laterally and dorsally but with nearly 20 equally long, stout, white bristles in the middle of the lower part. Palpus black with slender, black bristles. Proboscis black, attenuate apically, heightened by the strong, basal earina ending beyond the middle. Pile of occiput white, long, fine, rather abundant and wavy. Upper occiput beginning at the middle with 14 pairs of rather strong, black bristles. Ocellarium with 4 pairs of quite long, moderately stout, black bristles, 2 of them placed behind. Sides of front with 2 rows of 15 quite long, more slender, black bristles or bristly hairs and a tuft of 5 fine, black hairs in front of each antenna.

Thorax.—The thorax is brownish black, densely covered with coarse, brownish yellow micropubescence in several shades and with the apparent bare areas of the opaque mesonotum reddish to golden brown pollinose. There is a conspicuous acrostical row of many strong, slender, black bristles, also a presutural differentiation of still stronger and still longer dorsocentral bristles; 5 long and 2 short bristles lie in front of the suture, 4 long and several short bristles lie behind the suture. Lateral bristles are black and rather strong. There are 3 notopleurals in a row, 1 postsupraalar and on the post callus 2 yellowish white, long, stout bristles and 3 weaker, black bristles. Scutellum concolorous and pubescent like the mesonotum, its margin with 3 pairs of stout, long, black bristles. No pile on the disc. From oblique light half of the scutellar disc appears bright, brassy pubescent, the other half dark and the presentellar area appears to have 2 bright stripes of such pubescence, together with a basolateral spot and from the opposite side these spots and scutellar pattern change position. Halteres dully brownish yellow. Pleuron somewhat reddish over the middle coxa, the whole surface densely brownish yellow micropubescence. Metapleuron with a vertical row of 8 stout, whitish bristles and 4 similar hairs.

Legs.—The coxae are brownish black, the femora all tend to be dark reddish brown and shining with the dorsal surface obscurely blackish. The pile is loose, coarse, subappressed and whitish. The bristles are pale yellow, almost limited to the hind femora and tibia, rather short but quite stout. Hind femur with 7 lateral

bristles, 4 ventrolateral, 2 distal ventral medial bristles, besides 5 other long, white hairs. At the apex there are 2 dorsomedial bristles side by side, 1 dorsolateral bristle and a larger one behind. All tibia light reddish brown. Hind tibia with 4 dorsolateral, 3 dorsomedial, 3 ventrolateral bristles and ventromedially 2 short, black bristles. Middle femur with a stout, white bristle anteriorly at the outer fifth, a smaller one before the middle and a stout bristle posteriorly near the apex. Middle tibia with 5 anterodorsal, 4 shorter, darker, dorsal bristles, 5 posterior and 2 posteroventral bristles besides 2 ventral distal bristles. Anterior femur with only 1 stout, reddish bristle posteriorly near the subapex. Bristles of its tibia similar to the middle tibia but shorter. Claws only moderately sharp, black, widely reddish at the base, pulvilli long, with parallel sides, the empodium long and sharp.

Wings.—The wings are hyaline, villi absent. Marginal cell widely open, posterior cells maximally open except the fourth which is closed with a long stalk; anal cell widely open, the ambient vein stout.

Abdomen.—The abdomen is slender and tends to be a little compressed laterally. It is dark, sepia brown and densely, brownish yellow pollinose, with a tendency towards slightly bare areas and change in pattern with a change in direction of light. From above obliquely the posterior corners appear to have large triangles of pollen. Pile fine, scanty, loose, yellowish white, subappressed, finely attenuate. There are a few longer hairs on the sides of the first 3 tergites and the first tergite bears 5 or 6 weak, yellow bristles, sometimes with 1 more stout, reddish bristle. Sternites concolorous with the mesonotum similarly pollinose but with wider, bare, posterior margins. Those of the first to fourth sternites each with a right bright, diffuse, small, medial, posterior spot of paler pollen, which stands out from the background. Terminalia reddish brown, the long processes of the fully cleft epandrium darker and the hypandrium darker. Basal portions more light reddish.

Type.—Male, Oroya, Peru, May 7, 1914, C. H. T. Townsend collector. In the United States National Museum. Named in honor of Dr. J. F. Gates Clarke.

Margaritola, new genus

Type of genus: *Margaritola mirabilis*, new species.

Peculiar flies, small and robust with short, rather high thorax, quite wide head with prominent, goggle-eyed appearance. It has exceptionally broad, generalized wings and a very long antenna composed chiefly of the microplumose microsegments which are longer than the third segment itself. Length 6 mm. without antenna.

Head.—The head is of medium length; in profile the upper face is quite short, almost plane with the eye and strongly retreating below. Occiput is poorly developed. Proboscis exceptionally small, short, robust, obtuse, and not extended as far as the face. Palpus large, elongate with small, short, basal segments. The antenna is exceptionally elongate, nearly twice as long as the head and slender. First 2 segments each quite short, subequal and bead-like. The third segment, microsegments included, is at least 5 times the combined length of the first 2 segments. The third segment proper is not as long as the 2 microsegments but nearly as long as the second and ultimate microsegment. Both microsegments and end of third segment bear dense, long micropubesence. In anterior aspect the head is quite wide, the face below the antenna is one-fourth the head width; upper third of face bears not very dense, coarse pubescence. Remainder is polished and bare,

except for similar sparse pubescence bordering the small, nearly horizontal subepistoma. Upper face with no pile; middle face with 3 or 4 long, bristly hairs of weak bristles. Lower retreating face with 3 or 4 similar hairs on each side. Front extremely short, the vertex a little widened, and scarcely excavated, though the eye rises above the vertex; the ocellarium is quite large and high with vertical sides.

Thorax.—The thorax is short and rather high, the mesonotum moderately high and convex, abrupt anteriorly, densely covered with coarse, undifferentiated, suberect pile; lateral bristles absent. Prosternum fused laterally.

Legs.—The legs are short, especially the femora; the first 4 femora are distinctly stout. The slightly longer hind femur only moderately stout, densely covered with rather long, fine appressed pile and a few, weak, slender bristles; it has very weak, ventrolateral bristles and 4 much longer, equally slender, ventromedial bristles. Hind tibia with 2 lateral bristles at the middle and beyond and in nearly the same position 2 ventrolateral bristles besides 2 ventromedial bristles and 2 others near the apex which are erect. Hind basitarsus with dense, erect, glandular-tipped pile. Claws small, straight, sharp and hooked at the immediate apex. Pulvillus well developed.

Wings.—The wings are exceptionally broad, being little more than twice as long as wide. The marginal cell quite widely open the first vein and the costa are all much stouter than the remaining veins. The 2 branches of the third vein end almost an equal distance above and below the wing apex. All posterior cells open maximally; the discal cell is short and broad, the short anterior crossvein enters the middle of this cell. Anal cell very widely open. Alula narrow and ambient vein complete.

Abdomen.—The abdomen is rather wide with the base perhaps not quite as wide as the mesonotum but with the third tergite, however, fully as wide as the mesonotum. The abdomen is comparatively short; males with 7 tergites, the seventh half as long as the sixth, the third a little more than half as long as the second, and the eighth totally concealed beneath the seventh. The male terminalia are recessive and the basally, at least partially split, epandrium is largely tucked beneath the last tergite. Remainder of terminalia rather deeply recessed within the epandrial hood and reminiscent of the *Stiehopogonini*, to which it is nowise related.

Named for my wife, Marguerite Chappell Hull, who has collected many flies and who has greatly aided me in my work with Diptera.

Margaritola mirabilis, new species

Abdomen broad, light brownish orange; wings exceptionally broad and brown.

Length, 7 mm. including the antenna.

Female. Head.—The head is quite black, for the most part polished and shining, and exclusive of the occiput, with only a small portion micropubescent or pollinose. Face not very high, gently rounded, retreating below with a large, short, oval, transverse, bare area occupying at least two-thirds of the lower face and not quite reaching the eye margin on each side. Remainder of face, cheeks, eye margins and the anterior border of the very small, horizontal subepistoma coarsely whitish micropubescent, arising from the bare area and widely separated. There is a tuft of 6 rather long, but extremely fine, pale yellow, bristly hairs extended straight outward. Palpus comparatively large, elongate, cylindrical, of 2 segments, the apex slightly narrowed; the apex bears 3 and the ventral surface bears in 1 row 6 slen-

der, yellow, bristly hairs as long as those of the face. Proboscis somewhat laterally compressed, much shorter than the face and extended horizontally forward. Front and vertex bare except for a narrow line of coarse pubescence along the eyes. Ocellarium moderately high and steep with 3 pairs of slender, yellowish, bristly hairs and a tuft of 2 on each side immediately behind. Antenna quite elongate, slender, black, the basal half of the second segment with reddish sepia cast to the dense, but extremely short pubescence. Beyond the middle the pubescence becomes a little more coarse or loose, equally dense and more blackish. Pile of the first 2 segments bristly and reddish. First 2 segments minute and subequal, the third segment bears 2 microsegments which together are longer than the first segment and of equal thickness. The first microsegment is no longer than the first antennal segment. There is some evidence that the apex of the second microsegment may be subdivided but it is obscured by the pubescence.

Thorax.—The thorax is black, dully shining. There is a triangle of greyish yellow, coarse pubescence medial to the humerus which extends backward as a medial vitta, widening and confluent with the other half before the scutellum, and laterally extended behind the humerus to broadly connect a similar stripe on the lateral margin. These triangles almost connect at the base of the pronotum. The lateral stripe runs narrowly in front of the post callus which is bare dorsally, but pubescent below. The broad area in front of the scutellum is flecked with bare spots. Scutellum gently convex to the sloping edge of the rim, shining black and thinly grey pollinose, mostly bare in the middle with a trace of a median spot of pubescence. Pleuron rather uniformly greyish yellow micropubescent. Pronotum with reddish brown pollen.

Legs.—The legs are wholly light brownish orange, except the last 3 segments of all of the tarsi, which are dark reddish brown, pile and bristles yellow. All femora are a little stout. Hind tibia a little swollen from the base to the apex and rather large at the apex. Hind basitarsus long and stout with dense, erect fringe of pale, ventral sensory hairs. All bristles are extremely weak, being scarcely more than bristly hairs except on the middle tibia where they are a little more prominent and those of the first 3 tarsal segments are more prominent. Hind femur with 3 quite long, ventromedial, bristly hairs along the middle, 5 ventrolateral, also along the middle, its tibia with 2 lateral, 2 dorsal, 3 ventrolateral and 2 ventral. Middle tibia with 3 rather long, ventral, 2 anterior bristles and 4 short, dorsal bristles.

Wings.—The wings are unusually broad and uniformly tinted with medium dark, reddish sepia brown. Marginal cell and all posterior cells widely open, including the anal cell.

Abdomen.—The abdomen is only slightly convex, the first 2 tergites being slightly flattened over the middle. The first 4 tergites have nearly parallel sides but are a little the widest on the second and third tergites where they are fully as wide as the thorax. Remaining tergites only a little narrowed. Seven tergites present, the seventh half as long as the sixth. Female terminalia short, obtuse, barely protruding beyond the seventh tergite. The whole abdomen is light brownish yellow or orange with minute, scanty, appressed pile which becomes a little longer, more dense and suberect on the side margins. No bristles present.

Type.—Female, Lourenco Marquez, Africa, November 6, 1902, C. W. Howard collector. In the collections of the United States National Museum.